

# Oregon Trail Final Report

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## ABSTRACT

In this paper, we describe the purpose of our project (Oregon Trail video game).

## Categories and Subject Descriptors

D.2.3 [Software Engineering] --- object-oriented programming;  
D.2.9 [Software Engineering] : Management --- programming teams, time estimation;  
D.3.3 [Programming Languages]: Language Constructs and Features --- classes and objects, control structures

## General Terms

D.2.3 [Software Engineering] --- object-oriented programming;  
D.2.9 [Software Engineering] : Management --- programming teams, time estimation;  
D.3.3 [Programming Languages]: Language Constructs and Features --- classes and objects, control structures

## Keywords

Oregon Trail, Video Games, Education, Learning, Student, History, Engine.

## 1. INTRODUCTION

For our project, we decided to recreate The Oregon Trail as a more modern representation. The original game has become very dated, and we feel that an updated version is necessary to keep students interested in the game. The outdated graphics of the old Oregon Trail cannot compete for the attention of young students while there are other AAA titles coming out with breathtaking graphics. We would like to provide a more immersive product that contains at minimum the same level of information about the journey to Oregon, along with more interesting and varied game play, including more variety in mini games. We believe that our product can help effectively teach about the journey the settlers faced when they traveled the real Oregon Trail.

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## 2. PRODUCT DESCRIPTION

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Figure 1. Main Menu.

The Oregon Trail is a historical game that focuses on both educational benefits and being an enjoyable game. In the game, the player chooses an occupation for the wagon leader, based on various professions that were prominent during the time period that the Oregon Trail takes place. We used the original occupations and added a few new ones, so the players could have a bit more variety with the game play.

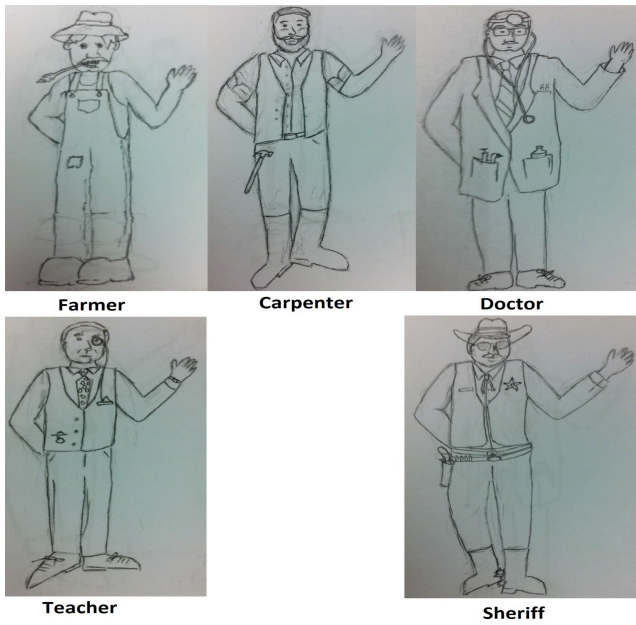


Figure 2. Character Selection.

After choosing an occupation, the player can then choose a name for themselves as well as for their spouse and up to 3 children. If the player decides to change their class, they are able to go back and change it before starting the game.



Figure 3. Traversing the Oregon Trail map.

During game play, the user will come across several towns with various historical facts. These towns are based on what the travelers actually traveled through during their journey. In each town, they will also be able to buy or sell various items that could be useful during their trip to Oregon. The user will see how much each item costs, as well as how much money they have available to spend. The user has to pay careful attention to resource management, as an uneven load of items could be disadvantageous.



Figure 4. Arrival at a town along the trail.

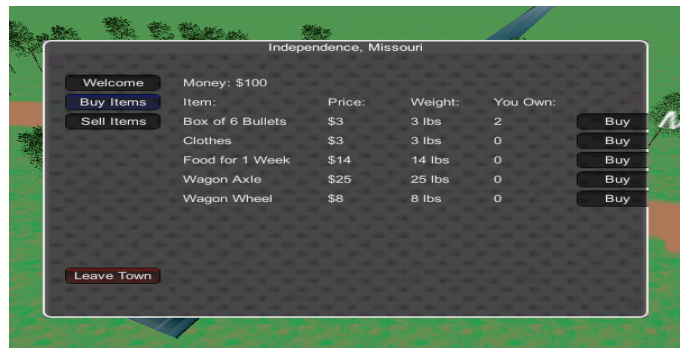


Figure 5. Store where items can be bought.



Figure 6. Arrival at a river along the trail.

When the wagon arrives at a river, a list of options will be displayed for the user to choose from. Fording the river means to walk through the river, if the river is deeper than 5 ft the user will lose items and have an increased chance to drown. Floating the

wagon across is simply caulking the wagon up, and depending on the wagon's weight, the wagon will either succeed in floating across or fail. Paying for a ferry guarantees 100% success to cross the river, but costs an amount based on the assets the user has (including items). Scuttling the wagon is giving up and crossing the river knowing full well your group will perish. Upon failing to cross the river, players will lose items, consisting of food, clothes, and whatever assets they have. There is also a chance the player will lose a family member to drowning depending on the depth of the river, and the player is capable of losing Oxen (however, if they have one oxen left, that oxen will not be perishable upon failing to cross the river).

### 3. Evaluation

1. Is it simple to begin the game: yes, sort of, no.
2. How easy is it to navigate through the demo?
3. How enjoyable is the hunting game?
4. Is it easy to buy and sell items at the store?
4. How would you rate the overall enjoyability of the functioning features of the demo version?
5. Are there any improvements that could be made to the functioning features of the demo?

We wanted to create a better version of Oregon Trail. Since we were unable to complete the entire game, we had to focus on enjoyable our demo was and its usability. We used an observational approach along with a nine-question questionnaire to answer the questions stated above.

#### 3.1 Procedure

In our evaluation, we asked users several questions to see how our product compared to the original Oregon Trail. Since our product is still in progress and we are comparing it to a finished product, we mainly looked at the mechanics and game play to see how much users believed we have improved over the original game play mechanics.

#### 3.2 Data Collection

In order to test how user's interacted with our product, we created a survey for them to answer after playing the game either until they felt they were done, or had completed the game. We recorded results from each user that played our game.

1. Which character did you choose?
2. Did you always know what to do when playing the game (1-10)?
3. Are the menu systems intuitive (1-10)?
4. Have you played the original Oregon Trail game?
5. Did you learn any history while playing this game (1-10)?
6. Did you find the game fun to play (1-10)?
7. Did you find the hunting game fun to play (1-10)?
8. Did you know how to buy and sell items and how much money your wagon had (1-10)?
9. Did you reach the end of the game?

### 3.3 Analysis

From our data, we determined average values, or in the case of categorical data, the percentage of respondents that responded in each way. We then drew conclusions based on the values we calculated in order to find how successfully we had created our game. While the game is not currently educational (not all of the historical information has been added), we were still able to determine how users might like our game mechanics.

### 4. Results

1. 55.56% chose Sheriff. 22.22% chose Doctor. 11% chose Banker or Carpenter
2. Average rating of 7.78
3. Average rating of 8.61
4. 58.8% have played Oregon Trail before
5. Average rating of 5.2
6. Average rating of 8.33
7. Average rating of 9.33
8. Average rating of 9.35
9. 94.4% completed the game

From our results, we can conclude that more than half of users have played the original Oregon Trail, and the vast majority of testers greatly enjoyed the game. We can conclude that our game has interesting mechanics that are easy to get used to, and are fun to play. Testers found the hunting game very fun, while the overall game was rated slightly lower. We can also conclude that testers were able to easily determine how to navigate the interface, and our instructions clearly explained any aspect of the game that needed explanation.

### 5. Conclusion

Our thanks to MECC for giving us a base point to compare our product to, and Unity3D for providing the game engine that helped us develop our product.

#### 5.1 Acknowledgements

The heading of subsections should be in Times New Roman 12-point bold with only the initial letters capitalized. (Note: For subsections and sub-subsections, a word like *the* or *a* is not capitalized unless it is the first word of the header.)

### 6. REFERENCES

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